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EPA's open secret science rule

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Synopsis: EPA's proposed regulation more-or-less banning the Agency's use of so-called "secret science" has received a lot of attention. Most of this is negative and some of it is justified. What has largely been missed is the deep impact that this rule might have on the US Public Access Program and on open science generally.

The proposed regulation can be found here, along with supporting documents and comments to date. Comments are presently due by May 30, 2018 but many people are requesting that the present 30 day comment period be extended to 90 days. This is fairly typical for major rules like this one.

Even on the negative side the criticism has been rather too narrow. People are focusing on things like privacy and other reasons to keep some data confidential. Everyone seems to be thinking about US research.

But the harsh reality is that science is a global exercise and a lot of researchers in other countries will have no interest in complying with EPA's burdensome requirements. The open science advocates like to ignore the fact that making one's research replicable is a difficult and costly task. That simple fact, the burden of making research replicable, could wind up causing most global research to be ruled out by the EPA rule.

Leaving this deep problem aside, consider the positive aspects, at least for those who advocate open science. The EPA rule is likely to finally establish specific standards for openness. Moreover, these standards will set a potential precedent for other Federal Agencies, possibly even other Governments, or even for journals. In other words this relatively small action by EPA is potentially a very big pilot project for the world.

This in turn raises another big problem. The present proposal is completely and hopelessly vague when it comes to saying what is actually required. It reads as though the concept of replicability were already well defined, which it most certainly is not.

This is a common problem with ground breaking new laws and regulations. They use language which is clear in its way but which has no operational definition. Working out what these new rules mean is then a complex and difficult matter, often involving protracted litigation. I have been studying this messy phenomenon for 50 years, beginning with the 1968 National Environmental Policy Act. NEPA required all Federal Agencies to do Environmental Impact Statements for all physical projects. But it did not say what these looked like or how to do them; it took years of confusion to work these questions out. So I developed a taxonomy of 126 different rulemaking confusions.

EPA's open science rule has the same broad impact and the same degree of vagueness as NEPA did. A great deal of work will have to be done before we know what these new rule actually require in practice. Some of this hard work can be done by EPA in formulating its final rules. But much of it is probably going to be done by expensive trial and error. At some point EPA is going to have to say, on a very specific case by case basis, which research can be considered and which cannot. This is when the rules get very specific.

Quite frankly I cannot imagine how the Agency is going to do this job, which is a measure of the magnitude of the challenge. First they have to figure out what using a given research result even means. For example, proposed major rules are accompanied by a voluminous Technical Support Document. It may cite hundreds, or even thousands, of research journal articles. Does each of these have to meet the availability and replicability standard? If so then I can imagine EPA dropping this citation practice.

But assuming that these deep problems finally get worked out, consider what it does. It basically extends the access and availability requirements of the Public Access Program from research that is federally funded to research that is federally used. (In fact EPA specifically cites their Public Access Plan as a supporting document for this new regulation.) It does this for data as well as articles. The researcher is basically required to provide access to everything technical that is involved in getting the research result.

In the environmental field a lot of research is done with federal policy in mind so this is potentially a very broad mandate. It in effect creates the new category of "EPA usable research." A lot of researchers, or their institutions, are likely to want their work to be EPA usable, even if EPA does not fund it.

So all things considered this regulation is a big extension of Public Access. It is also a big step forward for open science. But it will be a big job for EPA and the research community to work out.
